

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-11. (canceled)

12. (currently amended) A magnetorheological clutch, comprising:

a stationary part ~~{1; 101}~~, of a rotatable primary part ~~{2; 102}~~ with primary lamellae ~~{4; 104}~~ and of a secondary part ~~{8; 108}~~ with secondary lamellae ~~{17; 117}~~ which is rotatable about a common axis and surrounds the primary part ~~{2; 102}~~, so as to define between the primary part ~~{2; 102}~~ and the secondary part ~~{8; 108}~~ a space ~~{28; 128}~~ which contains a magnetorheological fluid and in which the primary lamellae ~~{4; 104}~~ and secondary lamellae ~~{17; 117}~~ alternate in the axial direction, and a regulatable magnetic field acting on the magnetorheological fluid, wherein a) at least one magnet coil ~~{21}~~ is arranged in front of or behind the lamellae ~~{4; 17; 104; 117}~~ in the axial direction and loops around a first U-shaped yoke ~~{20; 120}~~, the having two end faces ~~{26; 126}~~ of which are on the same side of adjacent to and parallel to the lamellae and ~~parallel to these~~, b) at least one second yoke ~~{22; 32; 122}~~ is provided on the side of the lamellae which faces away from the first yoke ~~{20; 120}~~, and c) the regions of the secondary part ~~{8; 108}~~ which lie inside and outside the lamellae ~~{4; 17; 104; 117}~~ in the radial direction consist of a material of low magnetic permeability.

13. (currently amended) The magnetorheological clutch as claimed in claim 12, wherein the cross section of the first U-shaped yoke ~~(20; 120)~~ is increased toward the end face ~~(26; 126)~~.

14. (currently amended) The magnetorheological clutch as claimed in claim 12, wherein the second yoke is a flat body ~~(32)~~ running in the circumferential direction and is surrounded by no magnet coil.

15. (currently amended) The magnetorheological clutch as claimed in claim 12, wherein the second yoke ~~(22; 122)~~ is also of U-shaped design and is surrounded by a magnet coil ~~(23; 123)~~.

16. (currently amended) The magnetorheological clutch as claimed in claim 12, wherein the ~~at least one~~ first U-shaped yoke ~~(20)~~ is connected to the secondary part ~~(8)~~ and the end face faces ~~(26)~~ of the first yoke ~~(20)~~ ~~forms~~ form the boundary wall of the space ~~(28)~~ containing the magnetorheological fluid.

17. (currently amended) The magnetorheological clutch as claimed in claim 12, wherein the ~~at least one~~ first U-shaped yoke ~~(120)~~ is connected to the stationary part ~~(101)~~ and is adjacent to an annular region ~~(124)~~ of high permeability of the secondary part ~~(108)~~.

18. (currently amended) The magnetorheological clutch as claimed in claim 17, wherein the at least one second yoke ~~(122)~~ is also connected to the stationary part ~~(101)~~ and is adjacent to an annular region ~~(125)~~ of high permeability of the secondary part ~~(108)~~.

19. (currently amended) The magnetorheological clutch as claimed in claim 17, wherein the second yoke ~~(32)~~ is designed without a specific magnet coil in the secondary part ~~(108)~~ otherwise consisting of a material of low permeability.

20. (currently amended) The magnetorheological clutch as claimed in claim 12, wherein a number of yokes ~~(20; 20, 22; 20, 75; 20, 84; 20, 94, 95, 96)~~ and magnet coils ~~(21; 21, 23; 21, 76; 21, 85)~~ are provided, their axes lying tangentially in an axially normal plane.

21. (currently amended) The magnetorheological clutch as claimed in claim 20, wherein the end faces of the yokes ~~(20; 20, 22; 20, 75; 20, 84; 20, 94, 95, 96)~~ are widened to form annular sectors ~~(50, 51; 70, 71; 80, 81, 82, 83; 90, 91, 92, 93)~~ which almost adjoin one another and the inner and outer radius of which corresponds essentially to that of the lamellae ~~(4, 17; 104, 117)~~.

22. (currently amended) The magnetorheological clutch as claimed in claim 21, wherein an even number of magnet coils succeed one another in a polarity such that adjacent legs (~~94", 95", 95', 96', 96", 20", 20', 94"~~) of their U-shaped yokes (~~20, 94, 95, 96~~) form a common annular sector as an end face.

23. (new) A magnetorheological clutch comprising:

a primary rotatable member and a secondary rotatable member forming a clutch cavity;

a magnetorheological fluid disposed in the clutch cavity; and

at least one coil assembly selectively operable to generate a magnetic field in the clutch cavity, the magnetic field having a first polarity in a first direction and a second polarity in a second direction different than the first direction.

24. (new) The magnetorheological clutch of claim 23, wherein the at least one coil assembly includes a magnet coil supported by a yoke having a first end face and second end face, wherein and first end face is polarized in the first direction and the second end face is polarized in the second direction.

25. (new) The magnetorheological clutch of claim 24, wherein the primary and secondary members have a common axis of rotation and the magnet coil has a center axis obliquely orientated relative to the axis of rotation.

26. (new) The magnetorheological clutch of claim 25, wherein the clutch cavity includes an outer diameter and the magnet coil is disposed adjacent to the clutch cavity and radially inboard of the outer diameter.

27. (new) The magnetorheological clutch of claim 23, wherein the at least one coil assembly comprises a plurality of coil assemblies.

28. (new) The magnetorheological clutch of claim 27, wherein the plurality of coil assemblies generate a plurality of first polarities in a first direction and a plurality of second polarities in a second direction.

29. (new) A magnetorheological clutch comprising:
a primary rotatable member and a secondary rotatable member, the primary and secondary members having a common axis of rotation and forming a clutch cavity having axial ends and an outer diameter; and
at least one coil assembly disposed adjacent to one of the axial ends and radially inboard of the outer diameter, the at least one coil assembly including a magnet coil having a center axis nonconincident to the axis of rotation.

30. (new) The magnetorheological clutch of claim 29, wherein the at least one coil assembly further includes a yoke supporting the magnet coil, the yoke having a plurality of end faces disposed adjacent to the clutch cavity and radially inboard relative to the outer diameter.

31. (new) The magnetorheological clutch of claim 29, wherein the at least one coil assembly comprises a plurality of coil assemblies, wherein a first coil assembly is disposed adjacent to a first axial end of the clutch cavity and a second coil assembly is disposed adjacent to a second axial end of the clutch cavity.